

ABSTRACT

To provide a polymer actuator which is light in weight and capable of linear expansion and contraction with a low voltage.

The polymer actuator 1 is composed of a plurality of gel/electrode complexes arranged in an electrolytic aqueous solution 6, said gel/electrode complex being composed of a polymer gel (2a, 2b) containing at least either of acidic or basic functional groups and electrodes (3a, 3b) placed in the polymer gel, said electrodes being made of a material capable of occluding and releasing hydrogen electrochemically, such that the polymer gel (2a, 2b) in the gel/electrode complex changes in pH upon application of voltage across the electrodes (3a, 3b) of the gel/electrode complexes (4a, 4b) and each of the gel/complexes changes in volume in response to the pH change.